WHAT IS CLAIMED IS:

1. A diagnostic apparatus for examining a heating, ventilation, and air conditioning (HVAC) system, said apparatus comprising:

a control unit detachably connected to the HVAC system, said control unit controlling a plurality of control parameters of the HVAC system; and

means for said control unit to monitor a plurality of performance characteristics of the HVAC system;

whereby said control unit monitors the plurality of performance characteristics while controlling the HVAC system to provide a diagnostic check of the HVAC system.

2. The diagnostic apparatus of claim 1 wherein said control unit controls a plurality of control parameters through a plurality of control function activators providing control functions to the HVAC system.

3. The diagnostic apparatus of claim 2 wherein said control function activators provide control functions directly to the HVAC system.

4. The diagnostic apparatus of claim 1 wherein said control unit controls a plurality of control parameters as a control system separate from internal controls of the HVAC system.

5. The diagnostic apparatus of claim 1 wherein said control unit controls a plurality of control parameters through an internal control system associated with the HVAC system.

6. The diagnostic apparatus of claim 1 wherein said control unit includes a visual indication of at least one properly functioning control circuit associated with at least one of the plurality of control parameters of the HVAC system.

7. The diagnostic apparatus of claim 1 wherein said control unit includes means for variably controlling at least one control parameter of the HVAC system.

8. The diagnostic apparatus of claim 7 wherein said variable control means is a pulse width adjuster.

9. The diagnostic apparatus of claim 7 wherein said variable control means is a variable voltage threshold (Vth) function adjuster.

10. The diagnostic apparatus of claim 1 wherein said means for said control unit to monitor a plurality of performance characteristics of the HVAC system includes a display providing a graphical representation of at least one performance characteristic.

11. The diagnostic apparatus of claim 1 wherein said control unit is powered from a power source separate from any power source powering the HVAC system.

12. The diagnostic apparatus of claim 1 wherein said control unit is powered by a power source powering the HVAC system.

13. The diagnostic apparatus of claim 1 wherein said control unit connected to the HVAC system with a first cable extending from said control unit to a control system of the HVAC system and a second cable connecting said control unit to a motor driving the HVAC system.

14. The diagnostic apparatus of claim 1 wherein said monitoring means of a plurality of performance characteristics includes monitoring a voltage associated with the HVAC system.

15. The diagnostic apparatus of claim 1 wherein said monitoring means of a plurality of performance characteristics includes monitoring a revolution per minute count of a motor driving the HVAC system.

16. The diagnostic apparatus of claim 1 wherein said monitoring means of a plurality of performance characteristics includes monitoring a Y and G threshold voltage.

17. The diagnostic apparatus of claim 1 wherein said control unit includes a PWM duty cycle generator.

18. An apparatus for examining a heating, ventilation, and air conditioning (HVAC) system, said apparatus comprising:

a portable control unit detachably coupled to the HVAC system, said control unit monitoring a plurality of performance characteristics associated with a plurality of control parameters controlling the HVAC system; and

means for controlling the HVAC system within the portable control unit through the plurality of control parameters of the HVAC system;

whereby said control unit monitors the plurality of performance characteristics while controlling the HVAC system to determine a status of the HVAC system.

19. The diagnostic apparatus of claim 1 wherein:

the HVAC system includes a control system controlling a motor within the HVAC system; and

said control unit includes a selectable switch, said switch allowing said control unit to operate in a first mode to monitor a plurality of interconnected functions between the HVAC system and the motor and a second mode to disconnect the control system from operating and controlling the motor;

whereby switching between the first mode and the second mode provides means for isolating a location of a malfunction occurring within the HVAC system.

20. A diagnostic apparatus for examination of a heating, ventilation, and air conditioning (HVAC) system, said apparatus comprising:

a control unit having connecting means to the HVAC system, said control unit controlling a plurality of control parameters of the HVAC system through a plurality of control function activators providing control functions to the HVAC system, said control unit variably controlling at least one control parameter; and

means for said control unit to monitor a plurality of performance characteristics of the HVAC system;

whereby said control unit monitors the plurality of performance characteristics while controlling the HVAC system to provide a diagnostic check of the HVAC system.